

No 53
8 South 10th

P.

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At n

Inaugural Essay.

On the eighth pair of nerves.

For the degree of Doctor of Medicine,

in the University of Pennsylvania,

By

Edward R. Ware of Georgia,

Philadelphia.

November 10th 1827.

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There is nothing more frequently praised than
the certainty of the evidence of natural truths.
Each writer in his turn thinks his discoveries
completely established, and arrays his alledged
facts in an apparently irresistible phalanx.
But almost every one who elicits novelty in
spite of his confidence, subjected to controversy
and contradiction. His facts are denied, his
experiments are refuted, his conclusions declar-
ed inadmissible, and his veracity and phi-
losophical honesty called into question.
These reflections were suggested by a perusal
of the written conflict respecting the influ-
ence of the eighth pair of nerves on di-
gestion. The experiments of Wilson Philip
illustrative of the influence of the eighth
pair of nerves on respiration and digestion,
have been subsequently repeated by an Eng-
lish writer (Broughton) and results diamet-
rically opposite declared. In order to satisfy myself



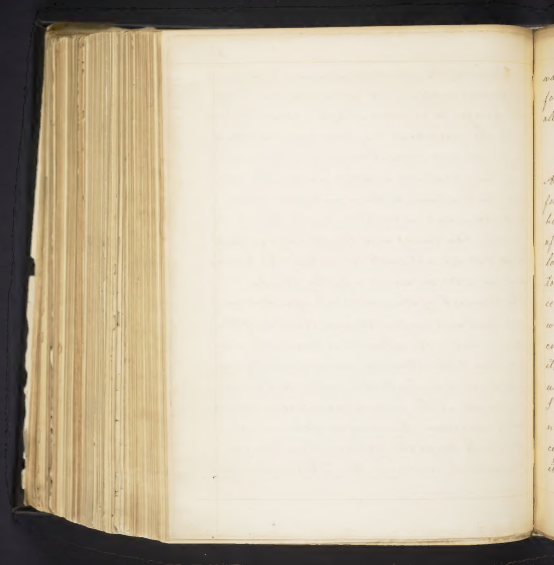
as to the cause of such discrepancy, and if possible to ascertain the truth, free from all bias or prepossession, I instituted the following course of experiments, assisted by Dr. J. H. Finley, and others of my medical friends.

Experiment 1.st

After causing two rabbits of the same age and size, to fast for the space of sixteen hours, I gave them as much parsley as they would eat. One of them I set at liberty. In the case of the other I divided, about midway the neck, the nerves of the eighth pair. The dissection was immediately followed by difficult respiration, soon attended with a croaking noise, and gradually increased until death supervened, which happened in six hours and a half, after the operation. The other rabbit was then killed, and a comparative examination made. The stomach of the one ope-

subjected to the operation, was much distended, the general mass of food had undergone but little change; that part which was in contact with the parietes of the stomach, was altered in colour, and somewhat in consistence, resembling partially digested snail. The central parts retained their natural colour and odour, and resembled finely chopped parsley. The lungs were largely engorged with blood, but did not sink in water. The trachea and air cells contained a frothy fluid.

The stomach of the rabbit not operated on, was hard and contracted, and about half the size of that of the other; that part of digestion confined to the stomach, was apparently completed, for, though all the contents had not passed out at the pylorus, yet what remained was a uniform chymous mass more compact and dry at the pyloric, than towards the centre or cardiac end. This experiment



was satisfactory, and conclusive, and was followed by five others of a similar nature all of which gave uniform results.

Experiment 2.^d

A half-grown cat was kept without food for twelve hours, and then one ounce and a half of raw beef was given. In fifteen minutes after, I divided the nerves of the eighth pair low down upon the neck. The usual symptoms followed, differing from those of the preceding experiments only in degree; respiration was deep, slow, and laborious, attended with a croaking noise, and apparent efforts to vomit, which continued to increase for ten hours; when from the great distress and prostration, I was induced to kill it. Upon examination no change was perceptible in the food, except in the circumference, which had lost its livid hue, and resembled beef shortly

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after being placed in warm water. It had lost nothing in weight. The rays were increased with blood, and the traction fluid with frothy fluid visible. It was covered with blood. This experiment was also continued to some other.

Experiment 2.

is again caused two varieties of the same age and size, to fast in about sixteen hours, but would ingest as much cabbage as they could eat, after which I made a section by the eighth pair of nerves in each, the one fast at night, the other the same being starved in day. Now, all the region of the stomach, I found it led to the intestine, & for some reason, even the tunica latta was 1/2 an inch shorter, the intervals being filled with air, mucus, oil and water in the section, I was led to think of water, & mucus first in the



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appears that if the individual rabbit, the
as a rule more than one was present in the field,
which constituted the case of present trip
together.

Experiment 4.th

it was hit after striking over a mid-dle as much
passing as it would cut, after the hair be-
ing shaved on the back over the region of
the stomach, and a small piece of tin bound
thereon, the eighth pair of nerves were di-
vided and about a quarter of an inch of
the inner section of each cut with tin
foil. The tin foil and tin were connected
with the opposite sides of the galvanic
battery, and a uniform effect kept up for
one hour and a half when the animal
died. Its respiration during the process
the state of the stomach, food, lungs, and
trachea differed in no particular from



those in the immediate neighbourhood.

Experiment 8.th

Two rabbits were caused to fast for about five or six hours when there was present most cabbage as they would eat. The one remained in its natural state, & the other the pneumogastric nerves were divided, and submitted to the same course as in the last experiment, and a uniform effect was kept up for seven hours when the animal died. Upon examination it was found to differ in no perceptible degree from that in which the nerves had been divided. Whilst the remains of the healthy rabbit, exhibited the contents diminished in quantity and in a completely stercoraceous state, and in the pyloric and caecal relatively dry and compact.



These experiments made with great care and time as it labours, seem to show the great caution with which we should receive the accounts of every experimental inquiry. They afford results agreeing with those of a⁹² Phillips respecting the effect on digestion, in the division of the vagus, for on that section together is almost totally arrested or so little, if this would indicate that it is a branch of the vagus and it may be attributed to the hostile reactions of the stomach to form it immediately increasing the secretion. Still it is not in the alleged cause, and as we believe the intrinsic mobility of the rectum does not cease after the division of these nerves, but the contrary appears to be ascertained, but inasmuch as it is incapable of doing good to hygiene it must be rejected. Another apparent barrier to stimulation is the

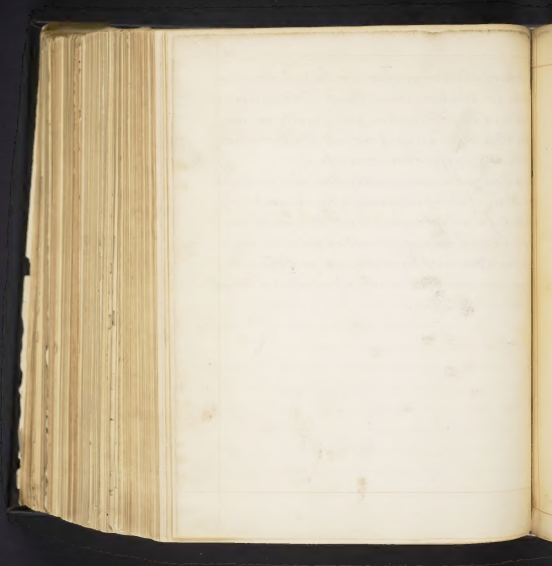


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state of the lungs, than by that of the stomach; for the engagement, and obstruction in the organ of respiration, put finally an entire stop to the access of air into the bronchial cells, and suffocation ensued.

As I set out in the investigation of a fact, rather than of an opinion, my essay is necessarily short, for a few experiments though of a troublesome and difficult character, furnished me with an adequate result, and gave me no opportunity of creating a lengthened dissertation.



No 60

C.

202 Spruce St.

very good - & deserving commendation
we are surprised that so many mistakes in
spelling however occur - especially the
most common word in Medicine - viz
Inflammation -

Filed March 9th. 1828

